

$$\alpha = 180^\circ - 42^\circ = 138$$

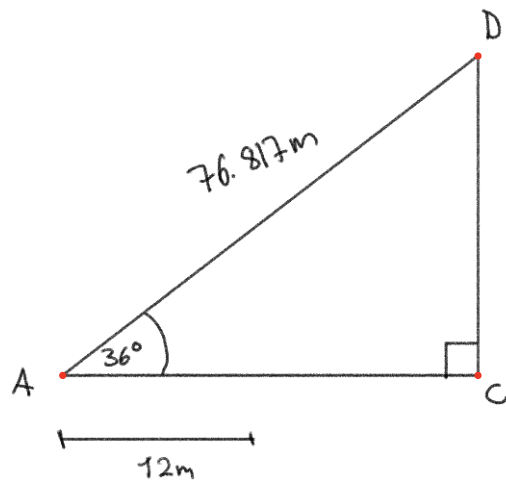
$$\beta = 180^\circ - 90^\circ - 42^\circ = 48^\circ$$

$$\alpha = 180^\circ - 36^\circ - 138 = 6^\circ$$

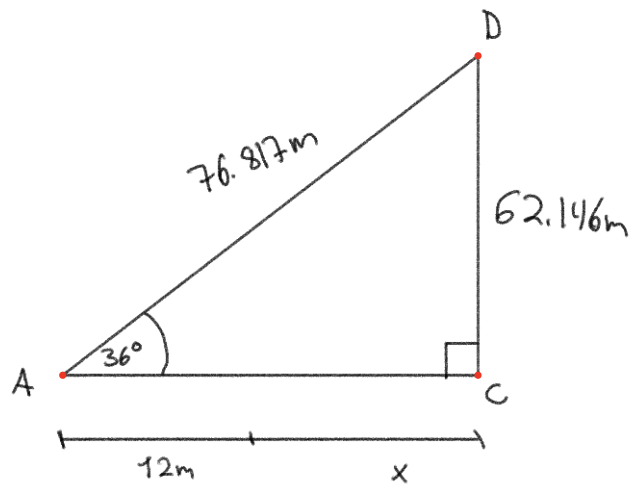
$$\frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$$

$$\frac{\sin(\alpha)}{AB} = \frac{\sin(\alpha)}{AD} = \frac{\sin(36)}{BD}$$

$$\frac{\sin(6)}{12m} = \frac{\sin(138)}{AD} \Rightarrow AD \approx 76.817m$$



$$\sin(36^\circ) = \frac{h}{76.817\text{m}} \Rightarrow \underline{h \approx 62.146\text{m}}$$



$$(12+x)^2 + 62.146^2 = 76.817^2$$

$$x = 33.15\text{m}$$

$$AC = x + 12\text{m} = 33.15\text{m} + 12\text{m} = \underline{45.15\text{m}}$$